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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,112	10/09/2003	Shuichi Yano	Q77869	8081

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EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,112

Applicant(s)

YANO, SHUICHI

Examiner

Eric B. Compton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/557,611.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/09/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Pat. 2,633,627 to Olmstead.

AAPA, as found on pages 1-3 of the Specification and Figures 3-6, disclose the conventional methods for forming a double row ball bearing of the general type claimed by Applicant. Figure 6 shows a bearing assembly comprising: an inner race (80) defining first and second inner race raceways (83) formed on the outer peripheral surface, an outer race (81) defining first and second outer race raceways (84) formed on the inner peripheral surface and corresponding to the first and second inner race raceways of the inner race to define first and second raceways for holding a first ball row (no ref.) and a second ball row (85).

Figure 6 clearly shows when the balls of the second ball row are respectively fitted into the second raceway in a state where the axes of the inner race and the outer race are inclined with respect to each other, the maximum value of a first clearance between a ball fitting direction rearward side edge portion of the second inner race raceway of the inner race forming the second raceway and a ball fitting direction rearward side edge portion of the second outer race raceway of the outer race forming

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the second raceway is larger than the outer diameter of the each ball of the second ball row, in order that the balls can be placed in the race.

However, as discussed in the Specification, AAPA does not disclose and the maximum value of a second clearance between a ball fitting direction forward side edge portion of the second inner race raceway of the inner race forming the second raceway and a ball fitting direction forward side edge portion of the second outer race raceway of the outer race forming the second raceway is smaller than the outer diameter of the each ball of the second ball row larger than the diameter of the balls or a second clearance smaller than the diameter of the balls.

Olmstead discloses a bearing assembly having: when the balls of the second ball row are respectively fitted into the second raceway in a state where the axes of the inner race and the outer race are inclined with respect to each other, the maximum value of a first clearance between a ball fitting direction rearward side edge portion of the second inner race raceway of the inner race forming the second raceway and a ball fitting direction rearward side edge portion of the second outer race raceway of the outer race forming the second raceway is larger than the outer diameter of the each ball of the second ball row, and the maximum value of a second clearance between a ball fitting direction forward side edge portion of the second inner race raceway of the inner race forming the second raceway and a ball fitting direction forward side edge portion of the second outer race raceway of the outer race forming the second raceway is smaller than the outer diameter of the each ball of the second ball row larger than the diameter

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of the balls or a second clearance smaller than the diameter of the balls (see Fig 11) and (col. 4 lines 33-48).

Regarding claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the bearing assembly of AAPA, with the clearances, as claimed, in view of the teaching of Olmstead in order to make the assembly process easier.

Regarding claim 2, Figure 6 shows that during the fitting step, the outer race (71) is held so as to extend in a vertical direction.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric B. Compton
Primary Examiner
Art Unit 3726

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